United States Department of Agriculture | Forest Service | Southwestern Region Regional Office | 333 Broadway SE Albuquerque, NM 87102 FAX (505) 842-3800 V/TTY (505) 842-3292

**File Code:** 3420 **Date:** December 20, 2007
**Route To:**

**Subject:** Summary of Douglas-fir Tussock Moth Activity and 2007 Pheromone Trapping Results on the Sandia RD

**To:** Cid Morgan District Ranger, Sandia Ranger District

This evaluation is a follow up to the 3420 evaluation dated August 17, 2006 that described and documented the Douglas-fir tussock moth (DFTM) outbreak occurring on the District. Of special concern were the new areas of defoliation mapped on the eastside of the Sandia Mountains in the Sandia Mountain Wilderness and in Tejano Canyon (Sandia Crest National Scenic Byway). DFTM defoliation in 2006 was detected on approximately 1,225 acres of the mixed conifer host type. Defoliation damages were heavy. No DFTM defoliation was detected in the higher spruce–fir type at the Crest. Defoliation damages and tree mortality were heaviest at the lower end of Tejano Canyon between Cieniga Canyon and Tree Springs Canyon. As indicated in our August 2006 evaluation, moth numbers trapped in 2005 at the Tree Springs Trailhead, Dry Camp Picnic Area, Las Huertas turnoff, Capulin Springs Picnic Area and Ninemile Picnic Area ranged from 33 to 44 male moths per trap. An average of 25 male moths per trap is predictive of visible defoliation occurring in 1-3 years. In 2006, defoliation was moderated to heavy at all of the sites trapped above.

The results of our 2006 pheromone trapping survey at Tree Springs Trailhead, Dry Camp Picnic Area (PA), Capulin Spring PA, the Los Heurtas Turn-off and Nine Mile PA are summarized in Table 1.

**Table 1. 2006 Douglas -fir Tussock Moth Trapping Results**

| Site | Trap 1 | Trap 2 | Trap 3 | Trap 4 | Trap 5 | Average |
|---|---|---|---|---|---|---|
| Tree Springs Trail Head | 44 | 34 | 26 | 42 | 45 | 38.2 |
| Dry Camp Picnic Area | 39 | 34 | 30 | 33 | 45 | 36.2 |
| Las Huertas Turnoff | 34 | 41 | 28 | 34 | 32 | 33.8 |
| Capulin Springs Picnic Area | 15 | 43 | 26 | 31 | 28 | 28.6 |
| Ninemile Picnic Area | 12 | 22 | 9 | 31 | 17 | 18.2 |


Printed on Recycled Paper

Although large numbers of male moths were caught in 2006, defoliation in 2007 was light and barely detectable at the trapping sites. Since DFTM outbreaks are boom and bust, we believe the tussock moth populations declined to low levels due to a combination of egg parasitism, predation, and egg mortality. During the Fall of 2005 egg masses were collected at these sites and sent to Natural Resources Canada, Canadian Forest Service, Victoria, British Columbia to be analyzed for virus infection and the occurrence of parasites. Although no naturally occurring virus was found, percent egg parasitism was 19.2 percent and roughly 3 percent of the eggs failed to hatch. Pheromone trap catches (Table 2) and ground observations conducted at these sites in 2007 also indicated DFTM populations had declined to very low levels.

**Table 2. 2007 Douglas -fir Tussock Moth Trapping Results**

| Site | Trap 1 | Trap 2 | Trap 3 | Trap 4 | Trap 5 | Average |
|---|---|---|---|---|---|---|
| Tree Springs Trail Head | 1 | 3 | 4 | 1 | 4 | 2.6 |
| Dry Camp Picnic Area | 5 | 11 | 8 | 17 | 9 | 10 |
| Las Huertas Turnoff | 7 | 4 | 5 | 16 | 3 | 7 |
| Capulin Springs Picnic Area | 12 | 8 | 0 | 8 | lost | 7 |
| Ninemile Picnic Area | 1 | 0 | 2 | 0 | lost | 0.75 |

Since no new areas of defoliation were detected in the vicinity of Cienega Canyon and Tree Springs Canyon during our recent annual insect and disease survey flights over the Sandia Ranger District (refer to our 3410 letter of November 13, 2007), we suspect the outbreak collapsed there as well. We plan to continue to deploy these pheromone traps again next year. If you have any additional areas you would like us to consider trapping, please let me know. If you have any questions regarding this evaluation, please give me a call at (505) 842.3287 or e-mail at trogers@fs.fed.us.

*/s/ Terrence J. Rogers*
TERRENCE J. ROGERS
Entomologist, Forest Health, New Mexico Zone

cc: Gilbert Zepeda

Debra Allen-Reid
Alan Kelso
Daniel E Ryerson
David A Conklin
stephani.sandoval
Terry J Rogers